



Green Codes (Blue Waters)

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Key Feedback

- Educate (find out what people know/think first!)
 - Workshops, professional credits
 - Strategic Grants – where in Michigan is it happening now – where are gaps in the state where more demos are needed – need a critical mass before it can take off!

Goal is to have LID/GI Approaches become the norm!

At the macro scale – Michigan should have a statewide network of GI landscape that localities can link to (At least 10 states have – why not MI?)

Municipal Regulations and Policies Affect LID Implementation

- ❖ Comprehensive Plans
- ❖ Zoning and Subdivision Regulations
- ❖ Historic Preservation and Entrance Corridors
- ❖ Stormwater Management and Erosion and Sediment Control
- ❖ Road Standards (both VDOT and local)
- ❖ Weed Ordinances, Flood Plain Ordinances, Stream Buffers
- ❖ Fire Codes

Case Example: How can we integrate a Low Impact Development Strategy (LID) into existing codes?

Green
Rooftops



Creek Restoration



Parking lot biofilter

Rain
Barrel



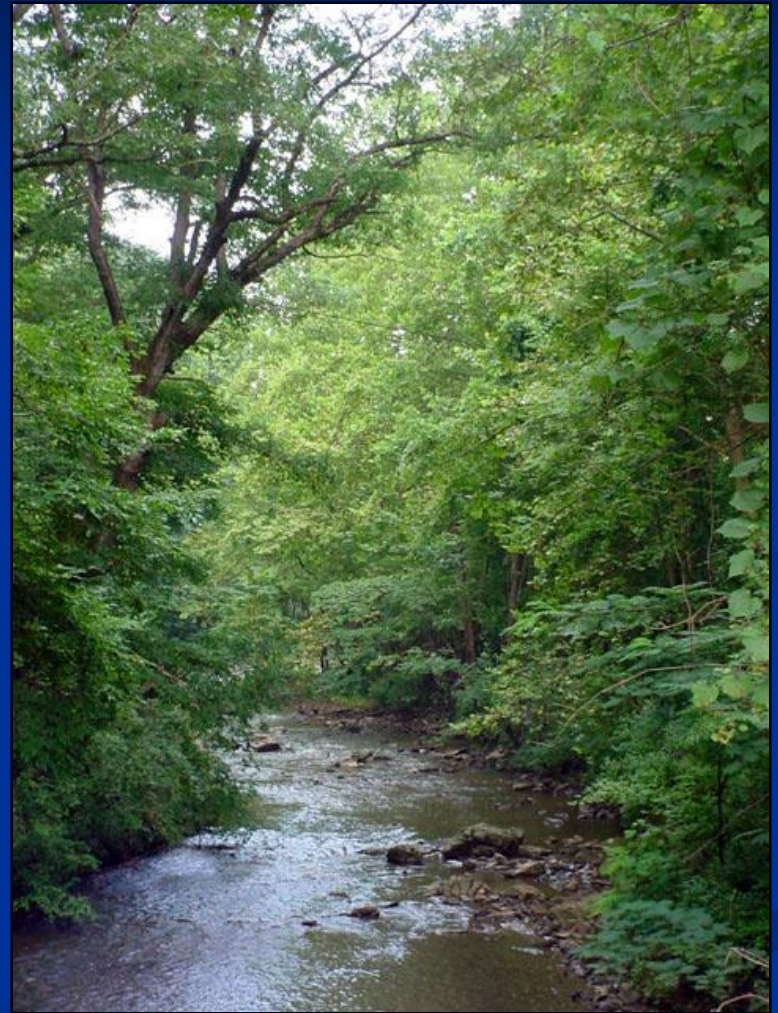
Downspout filtration



Porous pavers

Why do we need to codify LID?

- To make it easier for developers and others to use it
- To clearly define what is allowed, expected
- To provide guidance on where/how to use



What would you want to codify?

List types of **measures allowed**, such as biofilters, porous pavement.

Decide if you want to **list each measure in your code** (Public Facilities Manual) **or as guidance** (easier to update, delete).

If you list measures you also need to be able to **know pollution reductions**.



What happens first?

👍 Reviewing potential LID measures to determine **whether, when, where allowed and then list** them (Fairfax County), **or** start by,

👍 **Mandating that LID be required** on all new developments to the “*Maximum Extent Practical*” (Stafford County Code – option in 2003, mandated 2004, now doing the policies and design guidance)

👍 Pros and Cons to each approach – ideally do all together.

Egg?

Or,



Adult

Conflicts to Implementing LID -- What developers said....

The planner told us they loved the biofilters but the engineers did not like them at all – we gave up after several months .

We tried to propose LID but we had to keep going back to the drawing board, finally we just gave up and put in the stormwater pond.



We wanted to add bioswales but there was no room to add them due to the requirements for bike lanes, sidewalks, curbs and no flexibility.

Find and Eliminate Code Conflicts

- ☹️ Fire Marshall prevents raingarden retrofit of cul-de-sac since loss of turn radius for truck.
- ☹️ Subdivision ordinance disallows raingarden or Filterra box stormdrain because it looks too weedy.
- ☹️ DOTs may not allow porous pavement in main travelways. Curb and gutter requirements prevent bioswales.



Even more obscure code conflicts

- ☹️ Historic preservation ordinance prevents green roof (does not blend with historically used roofing materials)
- ☹️ Entrance corridor overlay does not allow biofilters because of weed concerns.
- ☹️ The weed ordinance prevents the height of raingarden species (can be considered weeds).

**Circa 1900
community store
could be candidate
for a green roof,
but conflicts with
historic materials
that would be
required.**



**This biofilter on
Route 29 was
initially denied
because entrance
corridor board
thought it was
untidy**

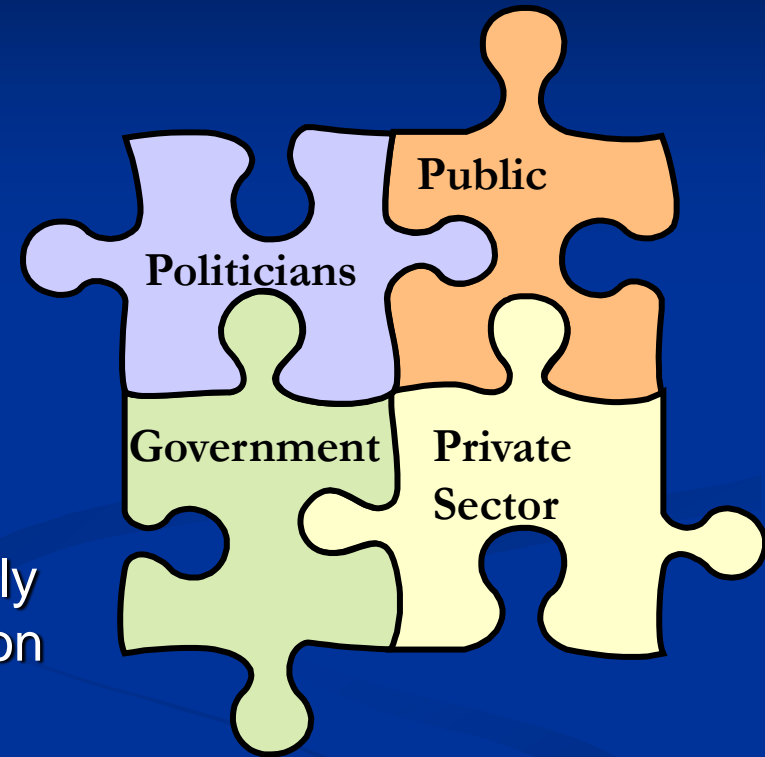
To Have Successful Program you need...

Public: Public needs to understand and be supportive of using LID measures. Also may need residential projects to reduce impacts too.

Private: There should be both requirements and incentives for private developers and business owners.

Government: Staff from planning, engineering and inspection need to be fully trained in methods, calculations of pollution reduction.

Politicians: Elected officials (BoS, Council) and Planning Commissioners need to be trained in LID to know what to require and how to apply measures.



**LID Implementation
requires all 4 puzzle
pieces**

Incorporate LID into Watershed plans

Fairfax County
VA incorporated
LID into 30
watershed plans
since most of the
county is already
developed.



Little Hunting Creek Committee
wrestles with the 25 year plan

Demonstrations: A good way to learn



**Municipal: Albemarle County
High School Parking Lot
Biofilter**

Have planning, engineering, public facilities staff participate in design and implementation to help them learn.



**Residential: Biofilter in Mint
Springs Park Albemarle County**

Tips for increasing likelihood of success

- ✓ If using **incentives, make sure developers will use** them. Ask developers and landowners first! Remember that Stafford abandoned incentives and moved to requirements.
- ✓ Check and **work with existing planning processes** (Avoid new projects to add LID while the county is requiring more parking!)
- ✓ Identify and **remove legal and practical barriers** to using LID.
- ✓ Establish **relationships with suppliers** to make it easy to get LID materials (e.g. Luckstone can make a biofilter soil, sedums for green rooftops may be grown at local nursery)

Additional Resources

- Center for Watershed Protection
www.stormwatercenter.net/ for resources
- Prince George's County Department of Environmental Resources for the Low Impact Development Design Manual
- Talk to other counties about their experiences – invite them for a staff briefing.



Green Code Audit: Green Your Locality

#1 – Code, policy and philosophy scavenger hunt: Obtain key documents (see syllabus list), e.g. comp plans, zoning ordinances, street standards, tree plans.

#2 – Read all the documents – noting things that may impact the environment: tree cover requirements, road widths etc. Refer to the COW

#3 – Fill out and score the COW: Ground-truth results with locals, other documents, what's missing?

#4 – Develop solution strategies. Change standards, obtain new funds, incentive programs?





Questions?